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(54) Covers for posts and W-beams of guardrails

(57) A covering piece for posts and metallic strips of guardrails, consisting of a part (1) having a body (2) provided with a rectangular plan hollow area (3) in its inner zone, provided with a longitudinal slit (4) provided with a quick cover flange, the metallic strip being covered by a piece (11) having a body (12) and a longitudinal slit (13) formed by a quick cover flange, having a hollow zone (14) in which the metallic strip (20) is coupled.

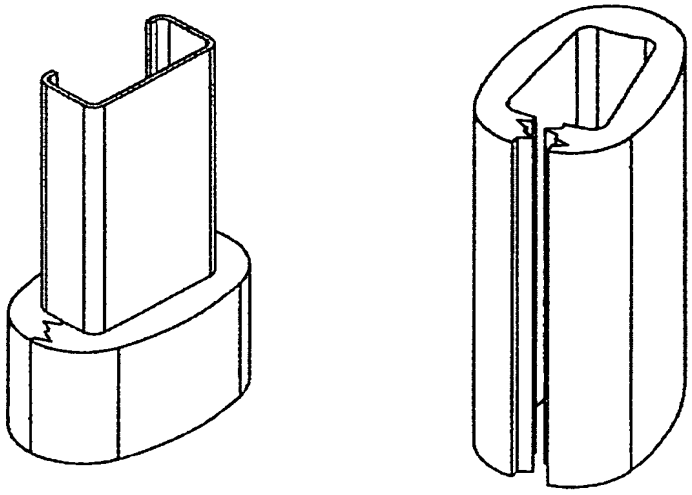

FIG. 2

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Description

PURPOSE OF THE INVENTION

[0001] The present invention, as stated in the heading to this descriptive report, refers to prefabricated protectors for the posts and metallic strips (fenders) rail guards installed on a large part of the Spanish highways, to be carried out using recycled rubber from waste tyres and which could be installed without having to dismantle the rail guards which once the protection has been fitted will be left padded to act as a protector, avoiding on the one hand, injuries caused to cyclists and motorcyclists if they fall and resolving the problem of pollution caused by tyres which are no longer used.

ANTECEDENTS OF THE INVENTION

[0002] The utility model is known as application number P9501694 which describes a shock absorber protection for the posts of the rail guards.

This system has the drawback of only partly protecting the rail guard because it only provides protection to the post but not to the metallic strip. On the other hand and depending on the material used for its manufacture (foam material) it would not endure the outdoor weather effects, apart from not helping resolve the environmental problem caused by tyres which are no longer in use.

The problem of recycling tyres along with the possibility of offering protection to cyclists and motorcyclists in the event of a collision with the rail guards described below, represent the purpose of this invention.

The mass production of tyres and difficulties in getting rid of them once they have been used, represents one of the most serious environmental problems in recent years globally speaking. To produce a tyre, a great deal of energy is needed — half a barrel of crude oil is needed to produce one lorry tyre — and if it is not properly recycled it provokes environmental pollution because it generally forms part of uncontrolled landfills. In Spain some 250,000 tons of used tyres are produced each year.

A 45% is deposited in untreated controlled landfills; a 15% is deposited after being ground up, and a 40% are not controlled.

[0003] To eliminate this waste, direct burning is frequently used, which causes serious environmental problems because it produces gas emissions that contain harmful particles for the environment, although the storage problem is no less problematic because this causes stability difficulties due to the partial chemical degradation which these suffer and lead to safety problems at the landfill.

[0004] The stacks of tyres form reefs where the proliferation of rodents, insects and other vermin represent an additional problem. The reproduction of certain mosquitoes which through their bites are transmitters of diseases and encephalitis, are 4,000 times greater in the stagnant water of a tyre than in nature.

[0005] The rail guards or "safety fenders" are safety barriers installed on highways composed of a metal fence or barrier, and posts that are secured to it anchored to the highway. Their job is to prevent four-wheel vehicles from coming off the road, due to a hypothetical loss of control.... but at the same time they become real weapons against motorists, cyclists, pedestrians, animals... and even the cars themselves. These "safety" barriers provoke a 15% of deaths in motorbike accidents.

[0006] There are very few regulations concerning railguards. These dates back to a Circular Order (221) of the year 1971, that has now been repealed and modified by the Circular Order 321/95 T and P of 1995. This latter order "recommends" replacing "H" section posts (IPN profile) for others in "C" section with rounded edges. The "recommendation" should be underlined because this measure is only carried out in the new construction infrastructures, in other words, the posts are not replaced in the old sections.

The present invention proposes a method to obtain a coherent recycling of these products, once they have been processed so they also protect cyclists and motorcyclists in the event of an accident because they can be used as an efficient protector of the posts and fenders of the rail guards. This invention resolves two problems: one the recycling problem and the other the safety problem that have not yet been resolved and at a lower cost then if resolving either of the two individually.

[0007] Two types of parts are manufactured, one for the post protection (whether "H" or "C" profile) and the other to protect the fender.

DESCRIPTION OF THE FIGURES

[0008]

Figure 1. View of the protector of the post and its section.

Figure 2.- View of the opening of the protector of the post for fitting it.

Figure 3.- View of the protector of the metallic strip or fender and its section.

The manufacture system would be as follows:

[0009] The raw material for manufacturing these parts, as mentioned above, will be recycled rubber obtained from tyres, which by means of a mechanical crushing process for which there are already factories on the market that are capable of doing this, a black pellet is obtained of different thickness. A 4 mm pellet will be sufficient for this application because a higher finesse is not needed and this cuts down on production costs. Two moulds will be made, one for the posts and

the other for the fender, where the tyre pellets will be introduced and an adhesive (polyurethane, epoxy, phenolic, etc.) and subject to a suitable pressure and temperature depending on the type of adhesive used. The dosage system should assure homogeneity of the material throughout the mould surface. In both cases the resulting part would be secured to the post and metallic strip by means of quick closure flanges.

Claims

1. Protection system for posts and rail-guard fenders characterised because they are made with recycled rubber pellets obtained from tyres no longer in use, which have been crushed and compacted by means of adhesives.

2. Protection system for posts and fenders of rail-guard, characterised because they can be installed on the present rail-guards without having to be dismounted.

3. Protection system for posts and fenders of rail-guard characterised because they completely protect the rail-guard and its posts.

4. Protection system for posts and fenders of rail-guard, characterised because for years they withstand exposure to outdoor weather because they are made with recycled rubber pellets.
Don Juan Amor Fernández, Intérprete Jurado de Inglés, certifica que la que antecede es traducción fiel y completa al inglés de un documento redactado en español.
I the undersigned Juan Amor Fernández, sworn translator for the English Language do hereby certify that de foregoing is a true and faithful version of the original Spanish document hereunto attached.

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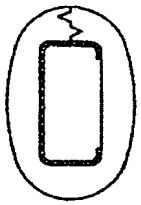
POST PROTECTOR



SECTION

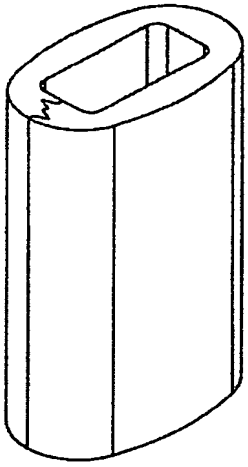
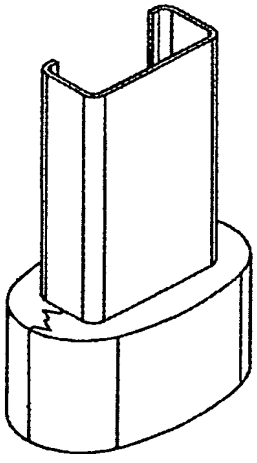


FIG. 1



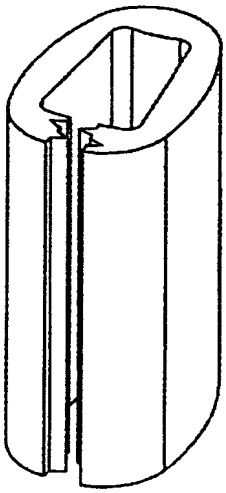


FIG. 2

W-BEAM PROTECTOR

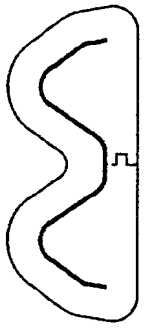
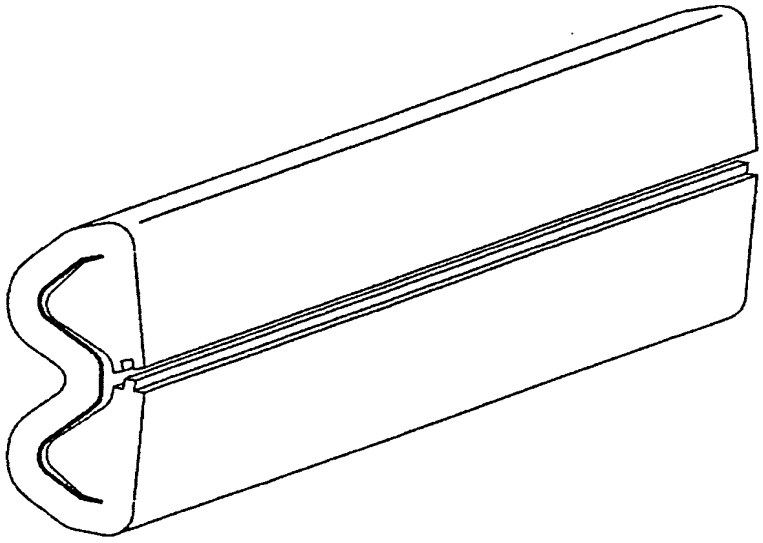


FIG. 3

SECTION



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EUROPEAN SEARCH REPORT

Application Number
EP 01 50 0283

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	FR 2 548 238 A (SCHUTZPLANKEN PRODUKTIONS GMBH) 4 January 1985 (1985-01-04) * page 5, line 6 - line 25; figures *	1-4	E01F15/04
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A	US 5 429 449 A (BAATZ GUENTER A) 4 July 1995 (1995-07-04) * column 2, line 23 - line 59; figures *	1-4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E01F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	27 January 2003	Verveer, D

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 50 0283

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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27-01-2003

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82